Low-field magnetoresistive and magnetic properties in (La1-xErx)0.67Sr0.33MnO3 manganites perovskite.

ABSTRACT

Polycrystalline manganites of (La1-xErx)0.67Sr0.33MnO3 (x=0.00, 0.05 and 0.10) had been prepared by conventional solid-state reaction method. X-ray diffraction analysis confirms that all samples are in single phase with distorted perovskite rhombohedral structure. Scanning electron microscope shows that small amount of Er substitution in La site affect the grain formation and this might affect the grain boundaries layer which resulting the reduction of Tc. All sample shows quite similar Low-field magnetoresistance (MR) effect with a large negative MR at low field (0-0.1T) region followed by a slower varying MR at high field (0.1-1T) region. The highest low-field MR value of -3% (at 0.1T, 300K) and high-field MR value of -8.3% (at 1T, 300K) are observed for sample X=0.10.

Keyword: Colossal magnetoresistance; Manganite.